AF 2834

PTO/SB/21 (03-03)
Approved for use through 04/30/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	09/848,032
Filing Date	MAY 3, 2001
First Named Inventor	THOMAS SCOTT GEE
Art Unit	2834
Examiner Name	JOSEPH WAKS
Attorney Docket Number	200-0325

ENCLOSURES (*Check all that apply*)

- [x] Fee Transmittal Form
- [ ] Fee Attached
- [ ] Amendment/Reply
- [ ] After Final
- [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
- [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
- [ ] After Allowance Communication to a Technology Center (TC)
- [x] Appeal Communication to Board of Appeals and Interferences (in triplicate)
- [ ] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) (please Identify below):

Remarks

Other Enclosure(s) :
1. self-stamped postcard.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual	JEROME R. DROUILLARD (Reg. # 28,008) DYKEMA GOSSET PLLC
Signature	
Date	MAY 15, 2003

CERTIFICATE OF TRANSMISSION/MAILING

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Typed or printed	DAPHNE POH		
Signature		Date	MAY 15, 2003

PTO/SB/17 (05-03)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 320.00

Complete if Known	
Application Number	09/848,032
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First Named Inventor	THOMAS SCOTT GEE
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METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☑ Deposit Account:

Deposit Account Number: 06-1510

Deposit Account Name: FORD GLOBAL TECH. LLC

The Director is authorized to: *(check all that apply)*

☑ Charge fee(s) indicated below ☐ Credit any overpayments

☐ Charge any additional fee(s) during the pendency of this application

☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below	Fee Paid
Total Claims		-20** =		X	=
Independent Claims		- 3** =		X	=
Multiple Dependent					=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	84	2201	42	Independent claims in excess of 3
1203	280	2203	140	Multiple dependent claim, if not paid
1204	84	2204	42	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	$320.00
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	750	2809	375	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 320.00

SUBMITTED BY				(Complete *if applicable*)	
Name (Print/Type)	JEROME R. DROUILLARD	Registration No. (Attorney/Agent)	28,008	Telephone	734-214-7670
Signature				Date	MAY 15, 2003

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Thomas Scott Gee
Serial No.	09/848,032
Filed:	May 3, 2001
For:	FAIL SAFE ENGINE COOLING CONTROL ALGORITHM FOR HYBRID ELECTRIC VEHICLES
Group Art Unit:	2834
Examiner:	Joseph Waks
Attorney Docket No.:	200-0325

* * * * * * *

BRIEF ON APPEAL

Honorable Director of Patents
Washington, D.C. 20231

May 15, 2003

Sir:

1. Real Party In Interest

The real party in interest to this appeal is the named assignee, Ford Motor Company, Dearborn, Michigan 48121.

2. Related Appeals and Interferences

There are no other known appeals or interferences which would have a bearing on, or be influenced by, the present appeal.

3. Status of Claims

Claims 1-14 were initially presented to the examiner for consideration. In response to an Office Action dated 6/27/2002, Claims 1 – 14 were cancelled and Claims 15 – 18 were added. As a result of an Office Action dated November 15, 2002, independent Claims 15 and 18 were amended. Claims 15-18 are on appeal. They are reproduced in APPENDIX I.

4. Status of Amendments

A Request for Reconsideration was filed on March 13, 2003 in response to the final Office Action of January 16, 2003. According to an Advisory Action dated April 18, 2003, this Request for Reconsideration was considered but was deemed by the Examiner to fail to place the application in condition for allowance.

5. Summary of the Invention

The present invention provides a fail-safe engine cooling control method and system for a hybrid electric vehicle (HEV) when the engine temperature exceeds a predetermined calibratable level such as when a vehicle cooling system fails.

In the event of an overheating condition, the engine is shut off if sufficient traction battery power is available to run with the electric motor. In the further event, however, that the engine is overheated, AND the traction battery is depleted, the engine will be operated on alternating cylinders, so as to allow the vehicle to continue moving. Thus, it is seen that the vehicle is always available for operation, notwithstanding a dead traction battery and an overheated engine.

6. Issues to be Decided

Whether Claims 15 – 18 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitada et al (JP 406048189 A) in view of Gopp et al. (U.S. Patent No. 5,555,871).

7. Grouping of Claims

All claims stand or fall together.

8. Argument

The Examiner has rejected Claims 15 - 18 under 35 U.S. C. §103(a) as being unpatentable over Kitada et al (JP 406048189 A) in view of Gopp et al. (U.S. Patent No. 5,555,871). He asserts that "Kitada et al. disclose a hybrid vehicle comprising: an internal combusion engine 1, an electric traction motor 8, a storage battery 7, a battery charge state detector 6, an engine temperature sensor 5, a vehicle system controller 4, 9 receiving temperature and battery state of charge signal, an engine control unit 4 operating the engine in a fail-safe mode when the engine temperature exceeds a predetermined threshold and halting the engine and powering the vehicle solely with the traction motor if the battery state of charge is greater than a predetermined temperature (sic; emphasis is added) threshold. However, Kitada et al. do not disclose an engine controller operating the engine on alternating cylinders when the engine temperature exceeds the predetermined temperature threshold and the battery state of charge is less than the predetermined charge threshold.

Gropp (sic) et al. disclose the engine controller operating the engine on alternating cylinders when the engine temperature exceeds the predetermined temperature threshold for the purpose of protecting the engine from overheating under low load condition or the cooling system failure."

The Examiner concludes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to design the hybrid vehicle as taught by Kitada et al. and to provide the engine controller operating the engine on alternating cylinders when the engine temperature exceeds the predetermined temperature threshold as taught by Gopp et al. for the purpose of protecting the engine from overheating when the traction motoro cannot replace the engine because the battery state of charge is less than the predetermined charge threshold and is unable to feed the motor.

Although it is not known why the Examiner refers in the underscored language to a temperature threshold for the traction battery, his rejection is improper on this and other grounds and should be reversed because neither Kitada, nor Gopp, whether taken singly, or in combination, either teach or suggest the claimed invention.

As noted above, Applicant's system keeps the vehicle moving even when the battery is dead and the engine is overheated, by operating the engine on alternating cylinders. What do Kitada and Gopp teach? Kitada teaches shutting down the engine if the battery is dead and the engine is overheated. Gopp, which is assigned to the assignee of the present invention, teaches operating an engine on alternating cylinders if the engine is overheated, but is devoid of any reference to a hybrid vehicle having both electric and I.C. engine propulsion.

The problem with the Examiner's rejection is simple: Kitada teaches shutting down the engine during a condition (overheated engine & dead traction battery), wherein the Applicant maintains engine power by using alternating cylinder operation. Taken together, Kitada and Gopp are devoid of any teaching that this could or should be done. Rather, the Examiner has engaged in hindsight reconstruction of Applicant's invention by plucking from Gopp the idea of running an engine on alternating cylinders. This rejection is without merit and should not stand.

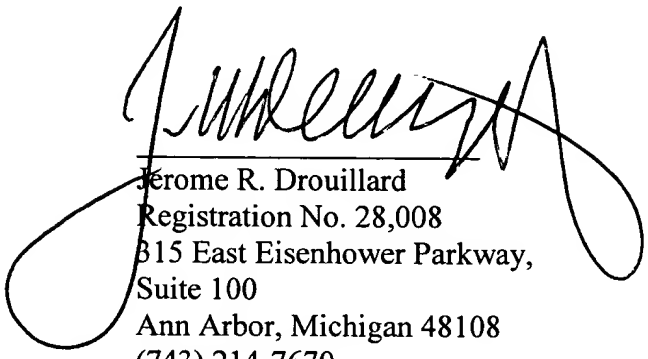
9. Conclusion

The Examiner's prior art rejection of Claims 15 – 18 should be reversed.

In accordance with 37 C.F.R. §1.192, this Appeal Brief is being filed in triplicate together with a Fee Transmittal for $320.00.

Respectfully submitted,

DYKEMA GOSSETT PLLC



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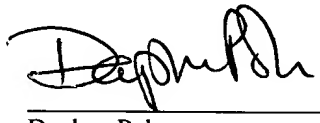
CERTIFICATE OF MAILING

I hereby certify that the enclosed Appeal Brief is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to Mail Stop Appeal Brief – Patents, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 15 day of May 2003.



Daphne Poh

APPENDIX I

15. A hybrid electric vehicle (HEV) comprising:

an internal combustion engine;
an electric traction motor;
a storage battery for furnishing power to the traction motor;
an engine temperature sensor;
a battery state of charge indicator;
a vehicle system controller (VSC) for receiving a temperature signal from the engine temperature sensor and a state of charge signal from the battery state of charge indicator; and
an engine control unit operated by the VSC, with the engine control unit being directed to operate the engine in a fail-safe mode in the event that the engine temperature exceeds a predetermined temperature threshold, with said engine controller halting the engine and powering the vehicle solely with the traction motor if the battery state of charge is greater than a predetermined charge threshold, and with said engine controller operating the engine on alternating cylinders in the event that the engine temperature exceeds the predetermined temperature threshold and the battery state of charge is less than said predetermined charge threshold.

16. A fail-safe engine cooling system according to Claim 15, wherein said VSC directs the engine controller to operate the engine on alternating cylinders when the speed of the HEV exceeds a predetermined speed threshold and the engine temperature exceeds said predetermined temperature threshold.

17. A fail-safe engine cooling system according to Claim 15, wherein said VSC directs the engine controller to operate the engine on alternating cylinders when an air conditioning system incorporated in the HEV is operating and the engine temperature exceeds said predetermined temperature threshold. Claim 16 to read as follows:

18. A method for operating an engine in a hybrid electric vehicle having both an internal combustion engine and a traction motor, with said method comprising the steps of:

measuring an operating temperature of the engine;

measuring a state of charge of an electric storage device connected to said traction motor; and

in the event that said operating temperature exceeds a predetermined temperature threshold and said state of charge is less than a predetermined charge threshold, operating the engine on alternating cylinders so as to lower the operating temperature of the engine, and in the further event that said operating temperature exceeds the predetermined temperature threshold and said state of charge is greater than the predetermined charge threshold, powering the vehicle solely with the traction motor.

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